<u>**Listing of the Claims:**</u>

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method of arranging image data representing a motion picture sequence ~~(10, B1 etc)~~ within a memory sub-system ~~(150, 210,220)~~ in an image data processing system ~~(200-220)~~, the method comprising dynamically selecting ~~(190)~~ the arrangement of image data for successive pictures ~~(10, B1 etc)~~ of said sequence in said memory according to at least one of: measured characteristics of said image data, measured characteristics of the performance of said processing system, and known characteristics of subsequent processing of said image data within said image processing system.

2. (currently amended) A method as claimed in claim 1, wherein said memory sub-system ~~(150)~~ includes an image data storage memory ~~(220)~~ constructed from paged memory.

3. (currently amended) A method as claimed in claim 1, wherein said memory sub-system ~~(150)~~ includes a processor cache memory ~~(210)~~ in addition to a main image data storage memory ~~(220)~~ .

4. (currently amended) A method as claimed in claim 1, wherein the step of selecting the arrangement of image data in storage memory ~~(220)~~ comprises selecting between a linear format ~~(Fig.4)~~, whereby image data is stored in memory on a line-byline basis, and at least one kind of tiled format ~~(Fig.7, Fig.9)~~, whereby two-dimensional groups of pixels are grouped in memory ~~(210, 220)~~ .

5. (currently amended) A method as claimed in claim 3 wherein where the memory sub-system ~~(150)~~ includes cache memory ~~(210)~~, said tiled format ~~(Fig.7, Fig.9)~~ is defined such that data for one tile corresponds to a whole number of cache blocks ~~(CBn)~~.

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6.   (currently amended) A method as claimed in claim 1, wherein the method comprises measuring one or more of the following as characteristics of the image data to influence the selection of the arrangement of data in memory ~~(210, 220)~~ :

A.   variability of motion vectors encoded within the received data;

B.   picture type ~~(I, B, P)~~;

C.   encoded data size per picture of the sequence;

D.   structure of a picture from which the image data is derived;

E.   structure employed for storing an image in image memory;

F.   constant characteristics of the stream obtained by decoding the sequence header of the image stream.

7.   (original) A method as claimed in claim 6, wherein the method looks ahead in the motion picture sequence so as to measure said characteristics of the image data for a given portion of the sequence and select the memory arrangement prior to processing that portion.

8.   {original) A method as claimed in claim 6, wherein measured characteristics of the image data at one part of the sequence are used effectively to predict characteristics of a subsequent portion of the sequence, and the memory arrangement controlled according to measured characteristics of recently processed portions of the sequence.

9.   (original) A method as claimed in claim 6 wherein the measurement of image data characteristics is averaged over a period of time.

10.   (original) A method as claimed in claim 6, wherein where the variability of motion vectors is measured separately between vertical and horizontal planes, each having a different effect in the selection of the storage arrangement.

11.   (currently amended) A method as claimed in claim 1, wherein said method comprises measuring one or more of the following as characteristics of system performance to influence the selection of the arrangement of data in memory ~~(210, 220)~~:

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G. data cache stall rates in the memory sub-system;

H. processor utilization;

I. quality of service, or other such qualitative measurements that are perceptible to the end user of the content being processed;

J. bandwidth of a link feeding data into or out of said image ~~processor~~ <u>processing system</u>.

12. (original) A method as claimed in claim 11, wherein where said memory sub-system ~~(150)~~ includes cache memory ~~(220)~~, measurement of system performance includes measurement of data cache stall rates during image reconstruction.

13. (currently amended) A method as claimed in claim <u>12</u>, wherein system performance is measured on a test basis using a sample of data, prior to processing the data.

14 . (original) A method as claimed claim 11, wherein system performance measured while processing a first part of the sequence is used in selecting the arrangement of memory for a subsequent part of the sequence.

15. (currently amended) A method as claimed in claim 1, wherein the method comprises using knowledge of subsequent processing steps to influence the selection of the arrangement of data in memory ~~(210, 220)~~.

16. (original) A method as claimed in claim 1, wherein the selection of memory arrangement is implemented at least partly by changing parameters used by memory-accessing program code.

17. (original) A method as claimed in claim 1, wherein the selection of memory arrangement is implemented at least partly by selecting different versions of code to be executed.

18. (currently amended) A method of processing image data representing a motion picture sequence ~~(Fig.4)~~ within a memory subsystem ~~(150)~~ in an image data processing system,

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the memory sub-system ~~(150)~~ including processor cache memory ~~(210)~~ in addition to main image data storage memory ~~(220)~~, the method comprising selectively using cache-handling functions under program control ~~(200)~~, according to at least one of: measured characteristics of said image data and measured characteristics of the performance of said processing system~~,~~ ~~among those listed in claim 2~~ .

19.   (currently amended) A method as claimed in claim 18, wherein a block allocation function, whereby a new cache-block is allocated and overwritten without pre-loading it from the main memory ~~(220)~~, is used selectively according to said measured characteristics.

20.   (original) A method as claimed in claim 18, wherein, in addition, cache pre-fetching is activated selectively in accordance with the measured characteristics.

21. (currently amended) A method of arranging image data representing a motion picture sequence ~~(10, Bl etc)~~ within a memory sub-system ~~(150, 210,220)~~ in an image data processing system ~~(200-220)~~, the method comprising dynamically selecting ~~(190)~~ the arrangement of image data for successive pictures ~~(10, Bl etc)~~ of said sequence in said memory according to at least one of: measured characteristics of said image data, measured characteristics of the performance of said processing system, and known characteristics of subsequent processing of said image data within said image processing system, combined with the method as claimed in claim 18.

22.   (currently amended) An image data processing system, the processing system including a memory sub-system ~~(150, 210, 220)~~ and means ~~(190, 200)~~ for dynamically selecting the arrangement of image data for successive frames of a motion picture sequence ~~(10, Bl etc)~~ within said memory sub-system ~~(150)~~ according to at least one of: measured characteristics of said image data, measured characteristics of the performance of said processing system, and known characteristics of subsequent processing of said image data within said image processing system.

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23.   (currently amended) A system as claimed in claim 22, wherein the memory sub-system (15 0) includes an image data storage memory (220) constructed from paged memory.

24.   (currently amended) A system as claimed in claim 23, wherein said memory sub-system (150) includes a processor cache memory (210) in addition to a ~~main~~ image data storage memory (220).

25.   (currently amended) A system as claimed in claim 22, wherein the means (90, 160, 170, 192, 196, 194) for selecting the arrangement of image data in said memory subsystem (220) is arranged for selecting between a linear format (Fig.4), whereby image data is stored in memory (220) on a line-by-line basis, and at least one kind of tiled format (Fig.7, Fig.9), whereby two-dimensional groups of pixels are grouped in memory.

26.   (currently amended) A system as claimed in claim 24, wherein where the memory sub-system (150) includes cache memory (210), said tiled format is defined such that data for one tile corresponds to a whole number of cache blocks (CBn).

27.   (currently amended) A system as claimed in claim 22, wherein the selecting means (190) includes means (190) for measuring one or more of the following as characteristics of the image data to influence the selection of the arrangement of data in memory:
    A.   variability of motion vectors encoded within the received
data ;
    B.   picture type (I, B, P) ;
    C.   encoded data size per picture of the sequence;
    D.   structure of a picture from which the image data is derived;
    E.   structure employed for storing an image in image memory,-
    F.   constant characteristics of the stream obtained by decoding the sequence header of the image stream.

28.   (currently amended) A system as claimed in claim 27, wherein the ~~selecting~~ means _for dynamically selecting_ ~~(190)~~ is arranged to look ahead in the motion picture sequence ~~(Fig.3)~~ so as to measure said characteristics of the image data for a given portion of the sequence and select the memory arrangement prior to processing that portion.

29.   (currently amended) A system as claimed in claim 27, wherein the ~~selecting~~ means _for dynamically selecting_ ~~(190)~~ is arranged such that measured characteristics of the image data at one part of the sequence are used effectively to predict characteristics of a subsequent portion of the sequence, and the memory arrangement controlled according to measured characteristics of recently processed portions of the sequence.

30.   (currently amended) A system as claimed in claim 27, wherein the measuring means ~~(190)~~ includes means for averaging measured image data characteristics over period of time.

31.   (currently amended) A system as claimed in claim 27, wherein where the measuring means ~~(190)~~ is arranged to measure variability of motion vectors, ~~it~~ _measuring means_ is arranged to do so separately between vertical and horizontal planes, each having a different effect in the selection of the storage arrangement.

32.   (currently amended) A system as claimed in claim 22, wherein the selecting means ~~(190)~~ alternatively or in addition comprises means ~~(190)~~ for measuring one or more of the following as characteristics of system performance to influence the selection of the arrangement of data in memory:

      G. data cache stall rates in the memory sub-system;

      H. processor ~~utilization~~ _utilization_;

      I. quality of service, or other such qualitative measurements

      that are perceptible to the end user of the content being

      processed;

      J. bandwidth of a link feeding data into or out of said image processor;

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33. (currently amended) A system as claimed in 32, wherein ~~where~~ the memory sub-system ~~(150)~~ includes cache memory ~~(220)~~, the means for measuring system performance is arranged to measure data cache stall rates during image reconstruction.

34. (original) A system as claimed in claim 32, wherein the means for measuring system performance is arranged to do so at least partly on a test basis using a sample of data, prior to processing the data.

35. (original) A system as claimed in claim 32, wherein the selecting means and means for measuring system performance are arranged such that system performance measured while processing a first part of the sequence is used to influence the arrangement of memory for a subsequent part of the sequence.

36. (currently amended) A system as claimed in claim 22, wherein the selecting means <u>uses</u> ~~is arranged to use~~ knowledge of <u>a set of</u> subsequent processing steps to influence the selection of the arrangement of data in memory.

37. (currently amended) A system as claimed in claim 22, wherein the image processing system is implemented at least in part by program code and a programmable processing unit ~~(200)~~ .

38. (currently amended) A system as claimed in claim 22, wherein the selecting means is implemented at least partly by means for changing parameters used ~~by said program code~~ in accessing said memory sub-system ~~(150)~~ .

39. (original) A system as claimed in claim 22, wherein the selecting means is implemented at least partly by selecting different versions of code to be executed.

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40.   (currently amended) An image data processing system including a memory sub-system (150) for storing image data representing a motion picture sequence (Fig.3) being processed, the memory sub-system (150) including processor cache memory (210) in addition to main image data storage memory (22 0), the system being arranged for using cache-handling functions selectively under program control (200), according to at least one of: measured characteristics of said image data and measured characteristics of the performance of said processing system, among those listed in claim 23 .

41.   (currently amended) A system as claimed in claim 40, wherein the system is arranged such that a block allocation function, whereby a new cache-block is allocated and overwritten without pre-loading it the new cache-block from the main memory (220), is selectively used according to said measured characteristics.

42. (original) A system as claimed in claim 40, wherein the system is arranged such that cache pre-fetching is activated selectively in accordance with the measured characteristics.

43 . (currently amended) An The image data processing system of claim 40 further comprising, the processing system including a memory sub-system (150, 210, 220) and means (190, 200) for dynamically selecting the arrangement of image data for successive frames of a motion picture sequence (10, Bl etc) within said memory sub-system (150) according to at least one of: measured characteristics of said image data, measured characteristics of the performance of said processing system, and known characteristics of subsequent processing of said image data within said image processing system, combined with the system as claimed in claim 40.

44. (currently amended) A computer program product, whether on a physical storage device or delivered through some other channel, comprising a computer readable instruction medium with instructions for causing a data processing system (200) to implement the steps of a method or the features of an apparatus embodying the invention as claimed in claim 1 a method of arranging image data representing a motion picture sequence within a memory sub-system in an image data processing system, the method comprising:

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dynamically selecting the arrangement of image data for successive pictures of said sequence in said memory according to at least one of: measured characteristics of said image data, measured characteristics of the performance of said processing system, and known characteristics of subsequent processing of said image data within said image processing system.